

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims**

1. (Currently Amended) A method for processing predicates in an iterator function, comprising:

under control of an iterator function processor that executes as part of a data store engine, when an iterator function included in a statement is invoked,

obtaining one or more predicates included in the statement;

applying the one or more predicates to a row of data;

if applying the one or more predicates results in a match, returning the row of data; and

if applying the one or more predicates does not result in a match, searching for another row of data for which application of the one or more predicates result s in a match.

2. (Currently Amended) The method of claim 1, wherein obtaining the one or more predicates comprises:

obtaining a qualification descriptor that describes the one or more predicates and one or more functions that are used to process the one or more predicates.

3. (Original) The method of claim 2, wherein each function is used to process one of the predicates.

4. (Original) The method of claim 1, wherein each of the one or more predicates comprises a simple predicate.

5. (Currently Amended) The method of claim 1, wherein the iterator function is invoked by [[a]] the data store engine and further comprising:

returning the row of data to the data store engine.

6. (Currently Amended) A method for processing predicates, comprising:  
under control of a data store engine,  
receiving a statement including an iterator function and one or more predicates;  
creating a qualification descriptor that describes the one or more predicates and  
one or more functions that are to be used to evaluate the one or more predicates; and  
invoking the iterator function one or more times, until receiving a done indicator  
from the iterator function, wherein each invocation of the iterator function results in receiving  
either a row of data for which at least one predicate has been applied or the done indicator and  
wherein one or more of the predicates included in the statement that have not been applied by the  
iterator function are applied by the data store engine.

7. (Original) The method of claim 6, wherein the qualification descriptor provides a  
handle to each of the one or more functions.

8. (Previously Presented) The method of claim 6, further comprising:  
when the iterator function is invoked, receiving an indication from the iterator function  
indicating which of the one or more predicates were applied by the iterator function.

9. (Original) The method of claim 6, further comprising:  
when the iterator function is invoked, receiving a row of data from the iterator function  
that matches the qualification of the one or more predicates.

10. (Original) The method of claim 9, further comprising:  
applying one or more additional predicates to the received row of data, wherein the one  
or more additional predicates refer to a column of data that is not in a result set generated by the  
iterator function.

11. (Original) The method of claim 9, further comprising:  
applying one or more additional predicates to the received row of data, wherein the one  
or more additional predicates performs a join between two tables.

12. (Currently Amended) A method for processing predicates, comprising:  
under control of a data store engine,  
receiving a statement including an iterator function and one or more predicates;  
creating a qualification descriptor that describes the one or more predicates and  
one or more functions that are to be used to evaluate the one or more predicates; and  
invoking the iterator function; [[and]]  
under control of an iterator function processor,  
retrieving the qualification descriptor;  
obtaining a row of data that matches ~~the qualification~~ at least one of the one or  
more predicates in the qualification descriptor;  
setting indicators to indicate which of the one or more predicates have been  
applied by the iterator function processor; and  
returning the row of data to the data store engine; and  
under control of the data store engine,  
applying any of the one or more of the predicates included in the statement that  
have not been applied by the iterator function processor.

13. (Original) The method of claim 12, wherein the qualification descriptor describes  
one or more simple predicates to be applied by the iterator function processor.

14. (Currently Amended) An article of manufacture including a program for  
processing predicates in an iterator function, wherein the program causes operations to be  
performed, the operations comprising:  
under control of an iterator function processor that executes as part of a data store engine,  
when an iterator function included in a statement is invoked,  
obtaining one or more predicates included in the statement;  
applying the one or more predicates to a row of data;  
if applying the one or more predicates results in a match, returning the row of  
data; and  
if applying the one or more predicates does not result in a match, searching for  
another row of data for which application of the one or more predicates results in a match.

15. (Currently Amended) The article of manufacture of claim 14, wherein operations for obtaining the one or more predicates further comprise:

obtaining a qualification descriptor that describes the one or more predicates and one or more functions that are used to process the one or more predicates.

16. (Original) The article of manufacture of claim 15, wherein each function is used to process one of the predicates.

17. (Original) The article of manufacture of claim 14, wherein each of the one or more predicates comprises a simple predicate.

18. (Currently Amended) The article of manufacture of claim 14, wherein the iterator function is invoked by [[a]] the data store engine and wherein the operations further comprise: returning the row of data to the data store engine.

19. (Currently Amended) An article of manufacture including a program for processing predicates, wherein the program causes operations to be performed, the operations comprising:

under control of a data store engine,  
receiving a statement including an iterator function and one or more predicates;  
creating a qualification descriptor that describes the one or more predicates and one or more functions that are to be used to evaluate the one or more predicates; and  
invoking the iterator function one or more times, until receiving a done indicator from the iterator function, wherein each invocation of the iterator function results in receiving either a row of data for which at least one predicate has been applied or the done indicator and wherein one or more of the predicates included in the statement that have not been applied by the iterator function are applied by the data store engine.

20. (Original) The article of manufacture of claim 19, wherein the qualification descriptor provides a handle to each of the one or more functions.

21. (Previously Presented) The article of manufacture of claim 19, wherein the operations further comprise:

when the iterator function is invoked, receiving an indication from the iterator function indicating which of the one or more predicates were applied by the iterator function.

22. (Original) The article of manufacture of claim 19, wherein the operations further comprise:

when the iterator function is invoked, receiving a row of data from the iterator function that matches the qualification of the one or more predicates.

23. (Original) The article of manufacture of claim 22, wherein the operations further comprise:

applying one or more additional predicates to the received row of data, wherein the one or more additional predicates refer to a column of data that is not in a result set generated by the iterator function.

24. (Original) The article of manufacture of claim 22, wherein the operations further comprise:

applying one or more additional predicates to the received row of data, wherein the one or more additional predicates performs a join between two tables.

25. (Currently Amended) An article of manufacture including a program for processing predicates, wherein the program causes operations to be performed, the operations comprising:

under control of a data store engine,  
receiving a statement including an iterator function and one or more predicates;  
creating a qualification descriptor that describes the one or more predicates and one or more functions that are to be used to evaluate the one or more predicates; and  
invoking the iterator function; and  
under control of an iterator function processor,

retrieving the qualification descriptor;  
obtaining a row of data that matches ~~the qualification~~ at least one of the one or more predicates in the qualification descriptor; and  
setting indicators to indicate which of the one or more predicates have been applied by the iterator function processor; and  
returning the row of data to the data store engine; and  
under control of the data store engine,  
applying any of the one or more of the predicates included in the statement that have not been applied by the iterator function processor.

26. (Original) The article of manufacture of claim 25, wherein the qualification descriptor describes one or more simple predicates to be applied by the iterator function processor.

27. (Currently Amended) A computer system having at least one program for processing predicates in an iterator function, comprising:  
under control of an iterator function processor that executes as part of a data store engine,  
when an iterator function included in a statement is invoked,  
obtaining one or more predicates included in the statement;  
applying the one or more predicates to a row of data;  
if applying the one or more predicates results in a match, returning the row of data; and  
if applying the one or more predicates does not result in a match, searching for another row of data for which application of the one or more predicates results in a match.

28. (Currently Amended) The computer system of claim 27, wherein obtaining the one or more predicates comprises:  
obtaining a qualification descriptor that describes the one or more predicates and one or more functions that are used to process the one or more predicates.

29. (Original) The computer system of claim 28, wherein each function is used to process one of the predicates.

30. (Original) The computer system of claim 27, wherein each of the one or more predicates comprises a simple predicate.

31. (Currently Amended) The computer system of claim 27, wherein the iterator function is invoked by [[a]] the data store engine and further comprising:  
returning the row of data to the data store engine.

32. (Currently Amended) A computer system having at least one program for processing predicates, comprising:  
under control of a data store engine,  
receiving a statement including an iterator function and one or more predicates;  
creating a qualification descriptor that describes the one or more predicates and one or more functions that are to be used to evaluate the one or more predicates; and  
invoking the iterator function one or more times, until receiving a done indicator from the iterator function, wherein each invocation of the iterator function results in receiving either a row of data for which at least one predicate has been applied or the done indicator and wherein one or more of the predicates included in the statement that have not been applied by the iterator function are applied by the data store engine.

33. (Original) The computer system of claim 32, wherein the qualification descriptor provides a handle to each of the one or more functions.

34. (Previously Presented) The computer system of claim 32, further comprising:  
when the iterator function is invoked, receiving an indication from the iterator function indicating which of the one or more predicates were applied by the iterator function.

35. (Original) The computer system of claim 32, further comprising:

when the iterator function is invoked, receiving a row of data from the iterator function that matches the qualification of the one or more predicates.

36. (Original) The computer system of claim 35, further comprising:  
applying one or more additional predicates to the received row of data, wherein the one or more additional predicates refer to a column of data that is not in a result set generated by the iterator function.

37. (Original) The computer system of claim 35, further comprising:  
applying one or more additional predicates to the received row of data, wherein the one or more additional predicates performs a join between two tables.

38. (Currently Amended) A computer system for processing predicates, comprising:  
under control of a data store engine,  
means for receiving a statement including an iterator function and one or more predicates;  
means for creating a qualification descriptor that describes the one or more predicates and one or more functions that are to be used to evaluate the one or more predicates;  
and  
means for invoking the iterator function; and  
under control of an iterator function processor,  
means for retrieving the qualification descriptor;  
means for obtaining a row of data that matches ~~the qualification~~ at least one of the one or more predicates in the qualification descriptor;  
means for setting indicators to indicate which of the one or more predicates have been applied by the iterator function processor; and  
means for returning the row of data to the data store engine; and  
under control of the data store engine,  
means for applying any of the one or more of the predicates included in the statement that have not been applied by the iterator function processor.



39. (Original) The computer system of claim 38, wherein the qualification descriptor describes one or more simple predicates to be applied by the iterator function processor.